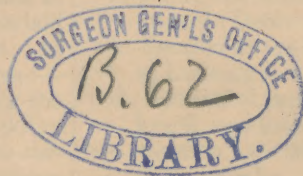


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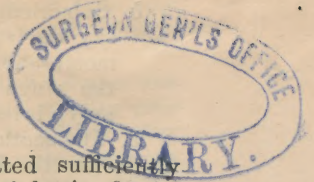
DISEASES OF THE THROAT.



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REPORT ON DISEASES OF THE THROAT.

By F. I. KNIGHT, M.D. Harv.



Laryngotomy for the Removal of Neoplasms (Krishaber, Planchon, Guyon, Cutter, Schwebel, Luschka).—A distinguished German laryngoscopist who has had much experience in the removal of neoplasms from the larynx, recently remarked that he had never performed laryngotomy for this purpose, because he had never had a case in which it was necessary in order to remove the growth. Still, there are cases in which it undoubtedly may be necessary on account of the situation of the growth (e. g., in the ventricle of Morgagni), the age of the patient, or some other peculiarity of the case. His remark, however, shows the great improvements which have been made in the methods of operating *per vias naturales*.

We wish, however, in the present article, to lay before our readers some account of the *improved methods of laryngotomy*, when this operation is necessary. Until the appearance of Krishaber's article (*Dictionnaire Encyclopédique des Sciences Médicales*, 1868), no general laws in regard to the *limitation* of the operation had been laid down for the guidance of the surgeon. In this excellent article, M. Krishaber says:—

"We have just seen, in considering the two dominant symptoms, that the polyp of the larynx being diagnosed, the surgeon, according to the nature of the symptoms which it establishes, should make, sometimes, direct laryngotomy, sometimes this operation preceded by tracheotomy; and ought sometimes, on the contrary, to operate *per vias naturales*." "When the polyp is voluminous and, situated in the cavity of the larynx, is liable to cause asphyxia, it is necessary to perform tracheotomy. If the polyp is multiple, if its extraction *per vias naturales* encounters difficulties pertaining to the age or particular condition of the patient, if the nature, even, of the polyp causes a fear that a partial removal may cause a rapid multiplication, in all these cases the polyp should be extracted *per vias artificiales*. When, on the con-

trary, the polyp is situated sufficiently high (at the tip of the epiglottis, for instance) to permit it to be seen directly, or when, with the laryngoscope, it is discovered in the cavity of the larynx, if its volume occasions slight dyspnoea, if it is implanted in such a manner that its displacement cannot lead to an unforeseen access of asphyxia; if, in a word, it is possible to prepare the patient, the operation will be performed *per vias naturales*."

PER VIAS ARTIFICIALES.

"Laryngotomy in cases of polyp of the larynx has hitherto been made very rarely. The proceedings employed are thus classified:—

- a. Section of all the parts of the larynx (cricoid, thyroid, the membrane which unites them and the thyro-hyoid membrane), plus some rings of the trachea (Ehrmann, Gurdon Buck, Gibb, Boeckel).
- b. Same operation without section of the cricoid (Debron).
- c. Section of the thyroid alone (Brauers, of Louvain).
- d. Section of the thyroid and of the thyro-hyoid membrane (Busch, Koeberlé).
- e. Section of the cricoid and trachea (Gilewsky).
- f. Section of the thyro-hyoid membrane alone (Pratt, Follin)."

From a consideration of the cases referred to above, M. Krishaber draws the following inferences, which, on account of the limited number of cases, diversity of the operations and multiple conditions, he does not claim to be conclusive.

"1. There are cases where destruction at their seat and removal of polyps of the larynx are impossible *per vias naturales*, perhaps on account of their volume, perhaps for very many other reasons which we have developed at length.

2. In these cases, two operative proceedings may be employed:—

- a. Sub-thyroid laryngotomy, that is to say the section of the thyro-hyoid membrane, in case of multiple vegetation, as these have a tendency to recur (papillomata) and as their seat does not extend below the vocal cords.
 - b. Sub-cricoid laryngotomy, that is to say the section of the tracheo-cricoid membrane, plus the section of some of the rings of the trachea, when the polyp is inserted below the vocal cords.
 3. The section of the cricoid ought never to be practised, whatever may be the seat and volume of the tumor, this being always accessible by the proceedings above or below which we have just indicated.
 4. The section of the thyroid may be necessary, if the tumor is situated in the ventricle of Morgagni, but in this case alone. This section ought to be avoided under all other circumstances :—
 - a. Because, the penetrating wounds of the thyroid produce, necessarily, lesion of the vocal cords, however exactly in the median line of the cartilage the operation may be performed.
 - b. Because the wounds of the cartilages of the larynx (and what we say here has reference, also, to the cricoid) may produce perichondritis and consecutive caries.
 - c. Because these cartilages are quite often ossified; because this ossification is ordinarily premature in individuals afflicted by diseases of the larynx, and because it is necessarily a cause of more difficult cicatrization.
 - d. And because, in fact, all the surface of the cavity of the larynx is accessible to the sight and to the touch, without the section of any of the cartilages of the larynx.
 5. In cases where asphyxia is imminent, tracheotomy will find its immediate indication, and the safety of the patient once reestablished by this operation, the surgeon will consider the consecutive proceedings which he should employ following the indications that we have developed in detail."
- Dr. Charles Planchon (*Faits Cliniques de Laryngotomie*, Paris, 1869) adopts M. Krishaaber's classification of operations with some extension as follows :—
- "1. Laryngotomy direct, comprising :—
 - a. Section of the thyroid cartilage alone.
 - b. Section of the thyroid cartilage and of the thyro-hyoid membrane.
 - c. Section of the thyroid cartilage and of the crico-thyroid membrane.
 - d. Section of the thyroid cartilage and of the thyro-hyoid and crico-thyroid membranes.
 - e. Section of the thyroid cartilage, of the thyro-hyoid, crico-thyroid membranes, and of the cricoid cartilage.
 - f. Section of the thyroid cartilage, of the crico-thyroid, tracheo-cricoid membranes, of the cricoid, and of the first rings of the trachea.
 - g. Section of the thyroid cartilage, of the thyro-hyoid, crico-thyroid membranes, of the cricoid, and of the first rings of the trachea.
 2. Laryngotomy indirect, comprising :—
 - a. Horizontal section of the thyro-hyoid membrane.
 - b. Horizontal section of the crico-thyroid membrane.
 - c. Horizontal section of the tracheo-cricoid membrane.
 - d. Section of the cricoid and of the first rings of the trachea."
- M. Planchon then introduces, in detail, the cases which have come to his knowledge where laryngotomy has been performed according to one or another of these methods, either for removal of a neoplasm or a foreign body, and from a consideration of these cases draws the following conclusions :—
- "1. The artificial opening of the larynx has been made by two different proceedings :—
 - a. Laryngotomy, direct : section of the thyroid cartilage.
 - b. Laryngotomy, indirect : section of the thyro-hyoid, crico-thyroid, or tracheo-cricoid membranes.
 2. These operations ought to be practised independently, except in case of lesions extraordinarily extensive.
 3. Tracheotomy will only be performed with laryngotomy when there are special indications.
 4. The section of the cricoid cartilage ought always to be avoided.
 5. The choice of the operation will be established by the exact diagnosis of the lesion.
 6. The section of the thyroid cartilage is not serious as regards life; practised methodically, it is not serious for phonation. The ossification of this cartilage is not a contra-indication. The healing will only be slower. This operation may be made every time there is need of access into the cavity, proper, of the larynx. The new artificial passage can be augmented at will by the section of the conoid ligament and

of the crico-thyroid membrane, practised transversely perhaps to the right, perhaps to the left of the median line, perhaps on two sides at once. In certain cases of serious fracture of the larynx, thyroid laryngotomy should be made in preference to tracheotomy. It might be very useful in some cases of obliteration of the larynx consecutive to wounds of the respiratory tube, or certain grave affections of the organ.

7. Indirect laryngotomy should only be employed in very special cases. The proceeding employed by Follin—section of the thyro-hyoid membrane immediately above the thyroid cartilage—is preferable to the proceeding of Malgaigne, section below the hyoid bone.

8. Section of the crico-thyroid membrane, and that of the tracheo-cricoid membrane, are very simple operations, but still more rarely applicable than the preceding."

M. Krishaber (*La Thyrotomie Restreinte appliquée au polype du ventricule du larynx*, Paris, 1869) gives a *résumé* of a paper presented to the "Société Impériale de Chirurgie," in which he recommends section of the thyroid cartilage without section of any of the membranes, and containing the details of a case and the following conclusions derived from his further experience:

"1. There are cases of polyp of the larynx, in which destruction and extirpation *per vias naturales* are impossible; in these cases, one can open the larynx directly, obtain its complete cicatrization and the cure of the patient.

"2. The choice of the mode of operation will depend upon the tumor and its structure; the opening of the larynx can be performed on the membranes of the larynx or on one of its cartilages:

"3. In cases where the polyp is implanted in the ventricle of Morgagni, section of the thyroid cartilage must be made. The separation thus obtained is sufficient for the extraction of even a voluminous polyp, without section of the thyro-hyoid and crico-thyroid membranes. The section of this cartilage can be made so as to spare the vocal cords, and then the voice remains intact. The presumed ossification of the cartilage is not a contra-indication although it retards cicatrization.

"4. Laryngotomy which consists in the section of the entire larynx, membranes and cartilages, such as has been performed a number of times, ought to be rejected. When, by means of the larynscope the exact seat of the tumor is established, it is

sufficient to open the larynx at this exact seat.

"5. Of all the methods employed up to this time for the extraction of polyps, the operation, of which I have just given the history, is that in which the incision of the larynx is the least extensive. It is to this proceeding that I attribute the cure of the patient. I propose to call the operation I have just described restricted thyrotomy (*thyrotomie restreinte*)."

It will be observed that M. Krishaber has very materially modified his opinion previously expressed in regard to the necessity of injuring the vocal cords, in making section of the thyroid cartilage.

M. Krishaber's paper is supplemented by a report by Dr. F. Guyon, to whom the subject seems to have been referred, which approves of Krishaber's method of operating in the case reported, and says that thyrotomy alone gives direct and complete access to the larynx, particularly to the ventricular cavities. It says that sub-hyoid laryngotomy practised according to the instructions of Malgaigne only gives access to the vestibule of the larynx, that is, to parts accessible *per vias naturales*, and that furthermore this operation requires extensive incision, and that it is only at the bottom of a very deep wound that the surgeon perceives, with difficulty, the ary-epiglottic folds and the ventricular bands. When the incision is made nearer the thyroid cartilage, as was performed by Follin, an easier access is gained to the larynx, particularly to the posterior part.

To reach the larynx by the course followed by Follin, it is necessary to divide a bursa and a cushion of fat often quite extensive, to detach the epiglottis from its inferior attachment and to raise it. Section of the crico-thyroid membrane gives sufficient space to introduce a canula or instruments, but it does not permit one to see into the laryngeal cavity, it does not necessitate a deep incision, but it exposes to injury the little crico-thyroid artery, hemorrhage from which is not without gravity, on account of the liability of the blood to run into the air passages.

Notwithstanding the fortunate results with regard to the voice which have been obtained by M. Krishaber and others, after section of the thyroid, considering the unfortunate results obtained by other operators and the results of experiments upon the cadaver, the report does not regard the operation to be without serious danger to the voice, but does not consider this a

contra-indication in cases where thyrotomy is indicated. In regard to the restriction of the operation proposed by M. Krishaber, the report considers that oftentimes in case of multiple sessile polypi, section of the thyroid cartilage alone might not give sufficient room for operation. In all these cases, there is always time, as M. Krishaber thinks, to enlarge the incision by dividing the membranes longitudinally. Balassa has twice incised the crico-thyroid membrane transversely, in order to separate more freely the two parts of the thyroid. This resource could be employed if the separation allowed by the longitudinal incision were not sufficient.

It has been sufficiently demonstrated that simple thyrotomy gives sufficient space for operation within the larynx, for operators to impose upon themselves the rule only to pass the limits of the cartilage, when, in the course of the operation, necessity compels them to do so.

Dr. Cutter, in a monograph entitled, *Thyrotomy for the Removal of Laryngeal Growths, Modified* (Boston, 1871), recommends, "In the operation for the removal of growths in the larynx by section of the thyroid cartilage to hold the use of tracheotomy and the tracheotomy tube as a reserve measure." Dr. Cutter is certainly entitled to all the merit of originality in this method of operating, for he seems not to have been aware of the operations of pure thyrotomy which preceded this; but we cannot call it the "American method," as it was done by others before he did it, and has been performed about an equal number of times in this country and in Europe, for the removal of growths, not taking into account the numerous operations of this kind for the removal of foreign bodies. The first operation of simple thyrotomy of which we have any record was performed by Brauers de Louvain, in 1833 (*Krishaber, Diction. Encyc.*, p. 762). Debron reported a case to the Société de Chirurgie de Paris, March 30th, 1864 (*Gazette des Hôpitaux*, 1864, Nos. 76, 87, 88), (Krishaber), in which he attempted sub-hyoid laryngotomy, was obliged, on account of threatened asphyxia, to perform thyrotomy and finally to perform tracheotomy, the cricoid cartilage having been left intact. Koerberlé (*Gazette des Hôpitaux*, June 7th, 1866), reports a case in which he performed "Laryngotomie d'emblée sans Trachéotomie," for the removal of a growth, June 19th, 1865. In Dec., 1864, Gilewski made a section of the thyroid cartilage and of the crico-thyroid membrane for the re-

moval of polypi (*Wiener Med. Wochenschr.*, 28 Juni und Juli, 1865. *British Medical Journal*, Sept., 1865), (Planchon). The operation has been done twice since that time by Balassa, and once by Krishaber, whose case, an abstract of which was published in the *Medical Times and Gazette*, Nov. 20th, 1869, was remarkable from the fact that the patient spoke with a perfectly normal voice immediately after the operation.

Schwebel (Thèse de la Laryngotomie Thyroïdienne et de ses Indications, Strasbourg, 1866, p. 17), says the operation of laryngotomy being decided upon, if the patient is afflicted with intense dyspnoea, if suffocation appears imminent, one should commence by practising tracheotomy and introducing a canula in order to make sure of respiration, or rather should make laryngo-tracheotomy by an incision of two rings of the trachea and of the cricoid cartilage. When, on the contrary, it has been decided to operate on a polyp which has not caused very serious trouble in respiration, and when asphyxia is not imminent, one can proceed to thyroid-laryngotomy without preliminary tracheotomy.

Laryngotomia Thyreoidea Lateralis. — Luschka (*Der Kehlkopf des Menschen*, Tübingen, 1871, p. 19) suggests this operation which has thus far only been performed on the cadaver. It is recommended, in case of neoplasm in the ventricle of Morgagni, when, from any cause, median thyrotomy does not seem advisable, or in case of any affection of the wall of the ventricle, removable by operative procedure. By this operation, it is proposed to open the ventricle of Morgagni without exposing the vocal cord or its muscle to any danger of injury.

This suggestion is founded on the well known fact, that the ventricles of the larynx extend upward on each side to the neighborhood of the upper border of the lateral wings of the thyroid cartilage.

The long axis of the ventricle runs nearly in the direction of a vertical line, drawn between the first and second quarter of the horizontal distance, between the incisura thyreoidea superior and the posterior border of the thyroid cartilage. This vertical line indicates the direction of the incision for lateral thyrotomy, in the execution of which it is necessary to divide the skin, the musc. sub-cut. colli, the musc. sternohyoideus, as well as the thyroid cartilage from top to bottom. After the edges of the cartilage have been drawn asunder by blunt hooks, the upper end of the ventricle of Morgagni comes into view in such

a manner that there is no difficulty in continuing the incision through its lateral wall as far as the level of the upper surface of the vocal cords.

Dr. Mackenzie, in a letter (*Lancet*, Dec. 2, 1871), replying to certain remarks of Mr. Durham in the Royal Medico-Chirurgical Society, reiterates the opinion expressed in his Essay on Growths in the Larynx, considering it "*a cardinal law that an extra laryngeal method ought never to be attempted (even when laryngoscopic treatment cannot be pursued), unless there be danger to life from suffocation or dysphagia.*"

Perichondritis Laryngea.—A case is reported in the *British Medical Journal*, July 13th, 1872, which seems to have been one of perichondritis laryngea; it occurred at the Hull Infirmary under the care of Dr. G. F. Elliot. The case is remarkable from its having occurred in a robust man without any history of syphilis or other constitutional disease, and from its having recovered without any necrosis. Ten weeks before admission, and shortly after the cessation of what seemed a slight cold, the patient noticed a difficulty in swallowing, and also that respiration was somewhat obstructed, especially on making any exertion. When these symptoms had existed for about a month, he observed that his neck was harder and larger than natural, and this continued gradually to increase. On his admission, the most noticeable feature was the great increase in the antero-posterior diameter of the neck; the swelling was evidently situated in the thyroid cartilage; it was hard, painless on pressure, and presented no indication of suppuration. He was ordered an iodide of potassium mixture, and the local application of iodide of ammonium ointment. On the 28th of February, he was suddenly seized with a complete obstruction to respiration. Mr. Plaxton, the house-surgeon, having been immediately summoned, with great promptitude opened the trachea, and respiration (all attempts at which had ceased) was happily restored by intermittent pressure on the thorax. The necessary incision gave vent to a quantity of somewhat glairy-looking pus. From this time, the man's improvement was uninterrupted, the swelling of the neck gradually subsided, and the thickened thyroid cartilage became nearly reduced to its natural dimensions. The tube was removed on the 7th of May, rather more than two months after its incision; the opening rapidly closed, and on the 11th of May, he was discharged, well.

Double Tone of the Voice in unequal Ten-

sion of the Vocal Cords.—Dr. M. J. Rossbach (*Virchow's Archiv*, April 11th, 1872) reports two cases of special interest with reference to the physiology of the voice, in which, during partial paralysis of one vocal cord, there were produced two tones instead of one, clearly distinguishable from each other. One tone had always the character of a chest-tone, the other that of a falsetto. The affected cord was seen to be stretched somewhat, but was not rendered so tense as that on the sound side. On attempted phonation, the arytenoid cartilages were not brought up quite to the median line; hence there was not a complete closure of the glottis. Dr. R. says that this formation at the same time of two tones by two unequally stretched cords, which, of course, were much weaker and less clear than a normal tone, admits probably of no other interpretation than that they have been formed by the vibrations of the vocal cords themselves. For, during the process of phonation the chink of the glottis was several millimetres wide and the processus vocales of the arytenoid cartilages did not even touch each other, so that there could be no interrupted currents of air. Then, again, it is hard to think that one and the same current of air, set into unequal vibrations by not equally rapid movement, should be divided into two tones.

Cases have been reported by Merkel and Türk in which a double tone was produced by a collection of mucus between the vocal cords and ventricular bands, and by growths and polyps on the vocal cords, dividing the glottis into unequal parts, but the above are the first cases reported in which a double tone was produced by unequal tension of the vocal cords.

Papilloma of the Larynx; Warts on the Hands.—Dr. Paluce de Marmon (*N. Y. Med. Record*, Oct. 1st, 1872) reports the case of a patient 5½ years of age, who had had whooping cough at 4, lasting four or five months. This was followed by hoarseness and aphonia. A homœopathist had told the parents that the child "would outgrow it." Instead of this, however, it died suddenly of asphyxia. On *post-mortem* examination, a large papillomatous growth was found in the larynx. There were also half a dozen warts on the backs of the hands. Dr. M. is inclined to think that there was a connection between the two growths.

Primitive Cancer of the Larynx.—Dr. Emile Blanc (*Etude sur le Cancer primitif du Larynx*, Paris, 1872), at the end of his

monograph, draws the following conclusions :—

"1. Primitive cancer of the larynx is a rare affection; the number of observations of laryngeal tumors in general, hitherto published, is very considerable; that of cancer of this region is limited to less than thirty.

"2. The point of origin and the seat of election of cancer of the larynx, is especially the mucous membrane of the ventricle of Morgagni.

"3. The principal varieties of cancer of the larynx are medullary cancer and epithelioma.

"4. Left to itself, cancer of the larynx invades the neighboring tissues, contracting the respiratory passages and those of deglutition. The cartilages of the larynx oppose for a long time the progress of the disease, but they end by being involved in their turn, and then the progress of the tumor is arrested only by the death of the patient.

"5. At the beginning of the affection, in spite of the most careful laryngoscopic examination, it is very difficult to recognize the cancerous nature of a laryngeal tumor. Later, the rapid extension and the peculiar aspect of the neoplasm, the ganglionic engorgement and the final cachexy make the diagnosis certain.

"6. The treatment recognizes two principal indications :—

a. To remove the disease.

b. To palliate the most urgent symptoms and especially the threatening of asphyxia. This last indication is fulfilled by tracheotomy, the first by the extirpation of the tumor. According to the case, this removal is practised by the mouth or by different procedures of laryngotomy.

"Laryngotomy is always indicated when the tumor is not accessible by the natural passages, or when by this latter means we do not succeed in the total destruction of the neoplasm. In conclusion, however well practised and however radical it may be, extirpation is constantly followed, sometimes by local recurrence, sometimes by secondary generalization, and finally by death by cancerous cachexy. Always, if one does not succeed in saving the life of the patient, at least he mitigates and prolongs it. It was thus that in the case observed by M. Desormeaux laryngotomy permitted the subject to survive for three years. Here, then, as in other analogous circumstances, surgical art by interfering

fulfils its mission, which is to soothe if not to cure."

The Electrolytic Treatment of Naso-Pharyngeal Polypi.—Dr. Paul Bruns, assistant in the surgical clinique at Tübingen, in an article on this subject (*Berliner Klin. Wochenschr.*, July 1, 1872), reports a case* treated in the clinique of his father, a short notice of which has already appeared in the latter's work on "Galvano-Chirurgie." A young man nineteen years of age, with a large naso-pharyngeal polypus, appeared at the clinique in November, 1865. Treatment by means of Electrolysis was attempted, but given up after six applications on account of want of noticeable improvement and of the proper apparatus. In December, 1866, the tumor was extirpated by means of a wire sling, but there remained a small part, which could not be immediately removed on account of profuse bleeding and faintness. The patient appeared again at the clinique towards the end of the year 1868. The tumor had grown to a much greater size than before the extraction.

It now caused a very considerable disfigurement of the face, which was noticeable at the first glance. Nearly the whole of the left half of the face appeared pushed up, the left half of the nose was noticeably broadened, the left nostril much dilated and filled up by a pale-red smooth swelling. The fossa canina and temporalis of the same side were filled up, the whole cheek pushed forward. The globe of the left eye stood several lines farther forward, and was at the same time displaced outwards and downwards. In consequence of this, there existed diplopia, incomplete closure of the lid and impaired action of the internal rectus muscle.

The pharyngeal cavity was nearly completely filled up with a very resistant tumor, which pushed forward between the edges of the artificial slit in the soft palate, which was made previously to the first operation, into the mouth and downwards as far as the lower end of the uvula.

Both nostrils were impervious to the air, the left in consequence of complete stoppage by the nasal part of the polypus, the right in consequence of the pushing of the septum towards this side, and the closure of its posterior opening by the growth. Respiration and deglutition were rendered

* An allusion to this article has been already made in the report on Electro-Therapeutics, Oct. 31, 1872, but the great importance of any aid in treating this most troublesome affection leads me to give the details of Dr. Bruns's case, and some particulars not given by Dr. Lincoln.

difficult. Hearing on the left side and the sense of smell were entirely lost. There existed also a condition of great general debility and frequent somnolency. From the above appearances the diagnosis of a so called retro-maxillary tumor (Langenbeck) was made, the extirpation of which it was thought could only be made by means of a temporary (osteoplastic) resection of the upper jaw. Instead of this, the attempt to destroy the tumor by electropuncture was repeated, and this treatment was commenced May 2d, 1869. The electrolytic treatment was continued to the end of March, 1870, and during these eleven months there were made one hundred and thirty applications, sometimes daily and sometimes at the interval of one or several days. The duration of one application was ten to fifteen minutes. After the first sitting, the left nostril was a little pervious to the air; after the tenth sitting, there was an evident diminution in the size of the pharyngeal part of the polyp. It continued gradually to diminish in size, and after forty sittings the anterior end of the nasal part was three centimetres removed from the edge of the nostril. There was notable improvement in breathing through the nose, the globe of the left eye was less prominent, its movement less hindered, and there was no diplopia. After sixty sittings no exophthalmos existed; the nasal part of the tumor was four centimetres from the nasal opening. After eighty sittings the polyp was five centimetres from the nasal opening; the pharyngeal part was no longer visible in the cleft of the palate, and could only be reached by means of a curved needle. After one hundred sittings, by rhinoscopic examination there was seen in the remainder of the tumor, which was of the size of a walnut, a deep ulcerating hole covered with purulent secretion which was soft to the touch, friable, and surrounded by resisting edges. After one hundred and thirty sittings, at the conclusion of the treatment, the outward deformity of the face, the prominence of the whole left upper half of the face, and the dislocation of the globe of the eye had disappeared. Both nostrils were pervious to the air, the nasal part of the polyp had entirely disappeared, the pharyngeal part was no longer visible in the cleft of the palate, and only a hard knot of the size of a bean remained on the posterior edge of the vomer. Respiration and deglutition were unimpeded; hearing in the left ear was nearly normal. Up to March, 1872, there had been no sign of a recurrence of the growth in this patient;

he had remained in the hospital as an attendant.

Dr. Bruns then gives abstracts of eight other cases of naso-pharyngeal polypi, which had been successfully treated by electrolysis. Five had been observed by Nélaton, two by Ciniselli, and one by Fischer.

In six of these, there was a complete cure, and in the remaining two the cure was incomplete; in the first in consequence of intercurrent typhus fever, which proved fatal, and in the second because the report was made before the conclusion of the treatment. In none of these cases had a recurrence occurred. The duration of the treatment in those cases where it is stated, is reported to have been as follows: six sittings, nine sittings at long intervals, six sittings within six weeks, and six sittings within about three months. In these cases, where the application was made at such long intervals, the current employed was of much greater intensity than in the case of Professor Bruns. In one of Nélaton's cases an operation had been previously performed by means of re-section of the hard palate, and there was a recurrence of the growth after three months. Eight months after the cure by electrolysis, there had been no recurrence.

Dr. Bruns does not claim that this method of treatment can be employed with success in all cases, and, indeed, mentions a case already reported by himself (*Berliner Klin. Wochenschr.* 12 u. 13, 1872), in which, after unsuccessful employment of electrolysis, extirpation was performed.

The histological character of the tumors successfully operated upon by electrolysis seems to have been fibrous; in the one unsuccessful case the tumor is described as being composed of a tissue in part purely fibrous, and in part very rich in cells approaching the sarcoma. Contrary to the custom in the treatment of tumors situated in other parts of the body, experience seems to show that it is better to employ a weak current, frequently repeated, than a strong one at longer intervals; the close proximity of the brain and the serious local disturbance which might be set up by the strong current, would indicate caution in this respect.

Dr. Bruns does not consider that in any case a diminution of the tumor was due to catalytic or escharotic action alone, but to both combined. In conclusion, Dr. Bruns says that there is inducement enough in previous experience to warrant the employment of electrolysis in other cases, even if we

cannot share the enthusiasm of Dolbeau, who characterizes its employment as "une méthode qui paraît destinée à faire disparaître toutes celles qui l'ont précédée."

On the Differential Diagnosis and Treatment of Bronchocele.—Dr. Morell Mackenzie (*Lancet*, May 4th and 11th, 1872) gives an interesting paper on this subject, which he had read before the Hunterian Society.

He says that since Coindet discovered the medicinal value of iodine, the therapeutics of goitre have remained almost stationary. Whilst, however, iodine exercises such a beneficial influence over some forms of goitre, in others it is quite inoperative, and hence it becomes important to differentiate the varieties of the disease which are met with in practice. Dr. Mackenzie divides bronchocele into seven varieties, viz.: (1) simple or adenoid, (2) fibrous, (3) cystic, (4) fibro-cystic, (5) fibro-nodular, (6) colloid, and (7) vascular.

The disease may present the characteristic features of any one of the types referred to, or many of the different varieties may be associated together in varying degrees. The internal administration of iodine is a specific for the endemic variety of *simple* or *adenoid bronchocele*; and, though it likewise often cures sporadic cases, it is frequently unavailing.

Simple hypertrophy occurring in weak æmemic girls, is most effectually treated by iron and proper hygienic measures. Cases not yielding to internal treatment may almost invariably be cured by counter-irritation, or the internal and external treatment may be combined. The liquor epispasticus of the British Pharmacopœia, applied about twice a week on alternate sides of the throat, is the remedy which Dr. M. usually employs. Electrolysis had also proved of great service in some cases. Of the fifty-four cases of simple goitre of which notes were taken, forty-seven underwent treatment. In thirty-five the enlargement entirely disappeared, five were lost sight of after a few visits, and in seven no appreciable alteration took place.

Fibrous Bronchocele may attack either lobe, the isthmus, or the whole gland, but it is comparatively rare that the isthmus alone is affected. To the touch fibrous goitre is smooth, hard, and unyielding. It does not, as a rule, cause any disturbance of function, but in some cases it presses on the trachea and produces dyspnoea. When once established it never disappears spontaneously, though it may occasionally be developed into the fibro-cystic or fibro-

nodular varieties. The treatment which has been found most successful in this variety by Dr. M., is the introduction of a twine seton passed transversely through the whole substance of the gland.

Counter-irritation, or applications of tincture of iodine or iodine ointment, or the injection of a solution of iodine, have proved quite unavailing. Out of one hundred and one cases of the fibrous variety which came under notice, in thirty-one the tumor was so small and the inconvenience so slight that treatment was not recommended; and nine patients, who were told that the disease was not dangerous to life, declined treatment. Of the remaining sixty-one, in forty-two the result was completely successful. In eleven, there was considerable improvement; in five, no change, and in three the parties ceased to attend before the result could be ascertained. In the two illustrative cases introduced by Dr. M., the dyspnoea was relieved within a day or two after the introduction of the seton.

The treatment of *cystic* goitre which Dr. M. likes best, is the conversion of the cyst into a chronic abscess. The treatment which most rapidly produces suppuration also most effectually arrests the hæmorrhage. The method of procedure is as follows: 1st. Empty the cyst; when practicable, make the puncture as near as possible to the median line in the most dependent portion of the tumor. As soon as the trocar is felt to pierce the cystic wall, it should be withdrawn and the canula passed further in by means of a blunt pointed key. The fluid having been withdrawn, a solution of per-chloride of iron (two drachms to the ounce), is injected through the canula by means of a syringe, the plug is inserted, and the canula secured in position by a strip of plaster. The injection of iron is repeated at intervals of two or three days until suppuration is established. When this point is reached, the tube is withdrawn, poultices are applied, and the case treated as a chronic abscess. When there is more than one cyst, the others can frequently be opened through the cyst originally punctured, and in this way some scars may be avoided. Of thirty-nine cases of *cystic goitre*, thirty-eight underwent treatment; all of these were completely cured.

The treatment of a case of *fibro-cystic* goitre consisted in the evacuation of the cysts and the injection of iron, and after the obliteration of the cysts, the introduction of a drainage-tube, from left to right, through the entire mass.

Great induration remaining, two caustic darts were introduced. By this treatment the circumference of the throat was reduced five inches and a half.

In *fibro-nodular* bronchocele, treatment has seldom any beneficial effect.

Of two reported cases of *colloid bronchocele*, one was treated by electrolysis, and the other by a seton, both unsuccessfully. Dr. M. thinks that with his increased experience both of these cases might have been successfully treated by irritating setons or caustic darts.

No case of the *vascular* form of bronchocele occurred. The rule which Dr. Mackenzie has adopted with reference to the advisability of surgical interference in cases of goitre is, *not to recommend* patients to undergo treatment unless there is serious embarrassment of function or continuous increase of the tumor; but, as none of the various methods of treatment employed by him have hitherto been attended by fatal results in his practice, he has always been willing to carry out treatment when the patient desired it, on account of disfigurement.

Paralysis of the Abductors of the Vocal Cords.—Dr. Franz Riegel, Privat-Dozent and First Assistant in the Medical Clinique at Würzburg (*Berliner Klin. Woch.*, May 13th and 20th, 1872), says that paralysis of one or a few muscles of the larynx is seldom met with; but when it does occur, it is generally myopathic; much more rarely does it happen that only a single muscle or a small group of muscles is paralyzed in consequence of a central lesion, or one affecting the vagus and recurrent. He believes the opinion of Gerhardt, that, in case of an affection of the recurrent only, a single group of muscles may be paralyzed, namely, the adductors and tensors, to be correct, notwithstanding the opposition of Navratil; and refers to a case reported by himself* in which paralysis and change in the voice came on immediately after an operation in a case of struma, evidently from injury to the recurrent nerve. The paralysis affected only a part of the muscles of the vocal cord on the side of the injury; the widening of the glottis was completely unimpeded. Those cases in which the paralysis is incomplete must not be considered as myopathic; for in an affection of the recurrent the paralysis may be incomplete at first, and afterwards become complete. It seldom happens that paralysis of the vocal cords, under ordinary conditions, leads to disturbance of the respiration. Complete paralysis of the recurrent on both sides, under ordinary circumstances, at

least, causes no dyspnoea, but complete loss of voice, difficult expectoration and impossibility of forcible cough. There is the same want of dyspnoea in complete paralysis of the recurrent on one side. This is easily explained from the position of one or both vocal cords in these cases. With reference to this point, the views of different authors seem to differ considerably. Many pathologists have spoken of paralysis of the recurrent when the paralyzed vocal cord is displaced nearly or quite up to the median line. Such a conception seems to Riegel to be erroneous. Complete paralysis of the recurrent can never result in a position of the vocal cord exactly on the median line. He does not deny that such a median position can be the consequence of an affection of the recurrent, as a neuro-pathic paralysis; but in the peculiar median position of the vocal cord there is never a paralysis of all the muscles of the larynx.*

From this position of the glottis in complete paralysis of the recurrent, the want of dyspnoea, at least under ordinary circumstances, is easily explained. The median position, however, pre-supposes an activity of the vocal cord; it can only occur through action of the adductors, and, therefore, can never be observed in complete paralysis of the cord. Neither is much dyspnoea possible in this form of paralysis, as there is still sufficient room for inspiration and expiration, as the glottis now in a manner assumes a mean position, the resultant of those two positions, which correspond to the two functions of vocalization and respiration. The same thing must naturally hold good for complete paralysis of the recurrent on one side. Here, the conditions for the production of dyspnoea are still more unfavorable. If we ask, on the contrary, which form of paralysis of the vocal cords produces dyspnoea, it is evidently the paralysis of the adductors. This form, also, of paralysis, like the complete paralysis of the recurrent, can occur on one or both sides. Paralysis of the abductors, while the adductors remain intact, is not followed by a mean position of the vocal cords and arytenoid cartilages. One would here, indeed, expect the same position as on the cadaver, with the possibility of approximation to the median line on intonation. Observation shows, however, that this does not occur, or at least such a condition has not been seen in those cases which have been considered paralysis of the abductors. The picture of paralysis of

* Complete paralysis of all the muscles of the larynx will produce only the post-mortem position of the vocal cord, and the arytenoid cartilage.

the abductor is characterized as follows: The vocal cord and arytenoid cartilage of the affected side stand near the median line immovable; on deep inspiration, the cord does not move outward, but sometimes a little inward; its capacity for tension and vibration is not materially limited; the voice, therefore, shows no essential change. It may be easily conceived how, on relatively little exertion, dyspnoea can arise from this median position of the paralyzed vocal cord. As the glottis-chink is diminished by one-half, the increased demand for air during any marked bodily exertion cannot be satisfied, and dyspnoea is the result. The only abductor of the vocal cord is the crico-arytenoideus posticus. Paralysis of the abductor, therefore, is paralysis of this muscle. Paralysis of the abductors on both sides occurs very rarely.

After citing the cases of Gerhardt, Türck and Biermer, Riegel introduces one of his own, in which there was paralysis of the crico-arytenoideus posticus on each side. The patient, a child 4 years old, was said by his parents frequently to throw his head strongly backwards and stretch his throat. On increase of dyspnoea, this position was particularly noticed by his parents. A similar condition obtained in Gerhardt's case, who explained this by the power of the hyo-thyroideus, as antagonist of the crico-thyroideus, to approximate the thyroid cartilage to the arytenoids with relaxation of the vocal cords, and so to diminish the contraction of the glottis caused by tension of the same. The question remains how the position of the vocal cords, which has been mentioned as occurring in case of paralysis of the abductors, is produced. According to theory, paralysis of the abductor, like complete paralysis of the recurrent, would manifest itself by the ordinary post-mortem position of the vocal cord. It would then be distinguished from complete paralysis of the vocal cord by the existence of the power of adduction, and from paralysis of the adductor from the want of ability to move outward from the post-mortem position. Instead of the post-mortem position, however, we find the vocal cords much nearer the median line. We see, therefore, an increased activity of the antagonistic muscles, as we see a preponderating contraction of the flexors in paralysis of the extensors. So we can designate this appearance as paralytic contraction of the vocal cord in the same way as we notice the secondary contractions in paralysis of the extremities. The occurrence of such contractions in case of paralysis has been accounted for by the so-called antagonistic theory, whereby, in consequence of the tonic of the non-paralyzed

muscles, the limb is drawn gradually to one side. But in the larynx, Dr. Riegel thinks a negative factor is more important. When the vocal cord, in case of paralysis of the abductor, is brought into a state of adduction by intonation, cough, expectoration, &c., the power to widen the glottis again is wanting; the cord retains the position into which it has been brought, with the exception of what change may be due to a relaxation of tension. In case of total paralysis of an extremity, the flexors overcome the extensors. In the larynx, on the contrary, respiration being a more important function than vocalization, we see the abductors overcome the adductors in case of complete paralysis. Hence the considerable drawing outward of the cords. If, on the contrary, only the abductor is paralyzed, the adductors obtain the preponderance, and hence a position results near the median line. This last position may only be arrived at gradually. Dr. Riegel alludes to the great rarity of bi-lateral paralysis of the abductors, and says that Gerhardt's case is the only other true one which has been published; one or more cases, however, have been published by Mackenzie, and two by the writer.*

Successful Tracheotomy performed on a Child of Ten Months (Union Medicale, 1872, No. 18); (Centralblatt für die Med. Wissenschaft, Aug. 23, 1872). Dujardin reports a case of croup in a child ten months old, in which tracheotomy was performed. It was necessary to wear the canula eight months. Now, after four years, a small, tracheal fistula exists. The reporter in the *Centralblatt* says this is the sixth successful case of tracheotomy in children under eighteen months reported in France.

A Remedy for Coryza.—E. Brandt (*Berliner Wochenschrift*, No. 12 and 18); (*Centralb. für die Med. Wissensch.*, No. 29, 1872) reports that for many years he had suffered every autumn with intense coryza, lasting several weeks, and that he has obtained a very favorable effect from the "Olfactorium Anti-catarrh-oicum" of Dr. Hager (acid carbol. 5 parts, spir. vini rectific. 15, liq. ammoniæ fort. 5, aq. dest. 10) inasmuch as the coryza was cured after one day's existence in the first stage, and without, as formerly, invading the trachea.

A few drops of the mixture should be poured on blotting paper and inhaled, care being taken to protect the eyes.†

* Boston Medical and Surgical Journal, Feb. 25th. and Sept. 30th, 1869.

† Writers of papers on the Diseases of the Throat and Chest will contribute much assistance in the preparation of the semi-annual reports in this department if they will forward copies of their papers, addressed to this JOURNAL.—EDS.